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Submitted Electronically and via U.S. Mail

August 13, 2018

The Honorable Andrew Wheeler
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington DC, 20460

RE: DOCKET ID: No. EPA-HQ-OPPT-2018-0210

ASBESTOS DISEASE AWARENESS ORGANIZATION'S DOCKET SUBMISSION IN
RESPONSE TO EPA'S PROBLEM FORMULATION DOCUMENT FOR ASBESTOS
RELEASED ON JUNE 1, 2018

Dear Administrator Wheeler:

The Asbestos Disease Awareness Organization (ADAO) hereby submits the following comments and supporting materials in response to the United States Environmental Protection Agency's (EPA) Problem Formulation Document regarding asbestos in all its forms, published on June 1, 2018. These comments build upon ADAO's previous docket submissions, adding new facts, evidence and data since the previous submissions.

Introduction and Summary

Founded in 2004, ADAO, an independent 504(c)(3) non-profit organization, has spent over a decade working to prevent asbestos-caused diseases. ADAO works nationally and internationally with the leading scientists, medical doctors, industrial hygiene specialists, legislators and community advocates to protect public health and our environment. As a leader in education, ADAO hosts an annual international academic conference, now in its 14th year, to promote scientific advances in the treatment and cure of asbestos disease and advocate for the elimination of all asbestos exposures throughout the world.

Pursuant to the Frank R. Lautenberg Chemical Safety for the 21st Century Act (LCSA), EPA was tasked with preparing chemical risk evaluations required under section 6(b)(4) of the Toxic Substances Control Act (TSCA) for potential risks of injury to health and the environment. In 2016, shortly after the passage of the LCSA, EPA selected ten chemicals for initial risk evaluations. Comprehensive assessment of risks and follow-up regulation to protect public health are believed to be most urgent for these 10 substances because of their extensive current use, known health effects and direct and widespread impact on public health and the environment. Asbestos was one of the materials selected first for evaluation. ADAO strongly agrees with that decision because (1) asbestos' lethal danger to public health is well-known and abundantly documented, (2) use, mining and importation of asbestos is legal under U.S. law with limited exceptions, and (3) the present and future risk from ongoing exposure to legacy products in workplaces, homes and buildings, and from the continued importation and use of asbestos in manufacturing processes in the U.S., present grave public health concerns.

Despite the voluntary elimination of many asbestos products, the death toll from asbestos exposure remains alarmingly high and is increasing. At the 14th Annual Asbestos Disease Awareness Conference in Washington D.C. this year, Dr. Jukka Takala DSc, MSc, BSc, President of the International Commission of Occupational Health (ICOH), reported a shocking increase in asbestos-related deaths, underscoring the escalating and critical need for action by EPA. According to Dr. Takala's recently published research, asbestos-related diseases cause 39,275 deaths in the United States annually - more than double the previous estimates of 15,000 per year [1].

There is overwhelming consensus in the scientific community that there is no safe level of exposure to asbestos. [2-5]

Thus, as noted by the World Health Organization:

“Bearing in mind that there is no evidence for a threshold for the carcinogenic effect of asbestos, including chrysotile, and that increased cancer risks have been observed in populations exposed to very low levels, the most efficient way to eliminate asbestos-related diseases is to stop using all types of asbestos” [6].

Because of the absence of any safe level of exposure to asbestos, a ban on all asbestos use is the only effective way to protect the public. Many nations around the world have taken this step. However, the U.S. is a laggard among industrialized nations in lacking virtually any legal prohibition on the mining, importation, use and disposal of asbestos.

In the late 1980s, EPA was on a path to impose comprehensive restrictions on asbestos. EPA in 1989 issued a rule under section 6(a) of TSCA prohibiting manufacture, importation, processing or distribution in commerce of asbestos in almost all products [7]. However, despite the comprehensive risk analysis supporting the rule, the Fifth Circuit Court of Appeals overturned the ban in 1990 for reasons unrelated to the dangers of asbestos [8]. The court decision later became the poster child for the inability of TSCA to provide a basis for meaningful action on widespread and unsafe chemicals. As a result, Congress became concerned that TSCA's high bar for regulation, stemming in large part from the court's restrictive interpretation of the law, had left EPA unable to protect the public from even highly hazardous chemicals like asbestos. This concern led to calls to reform TSCA by strengthening the law's provisions for chemical risk evaluation and regulation. Congress responded to these calls by enacting the 2016 Frank R. Lautenberg Chemical Safety for the 21st Century Act (LCSA).

ADAO and many other observers expected that the new law would enable EPA to reinstate the comprehensive ban on asbestos use it had imposed in 1989. The decision to include asbestos in the first 10 risk evaluations seemed to reinforce this hope. However, any expectation that EPA would take meaningful action on asbestos has been dashed by its 2017 scoping document and now its June 2018 problem formulation for the asbestos risk evaluation. Through a combination of legally indefensible exclusions and loopholes, deviations from accepted scientific methods and refusal to accept previous peer reviewed determinations of risk, the Agency is on a path to produce an asbestos risk evaluation that ignores important exposure pathways and at-risk populations and reaches grossly misleading and inadequate conclusions about asbestos' ongoing and future dangers to public health. Among these fundamental deficiencies are:

- EPA excludes ongoing and future use and disposal of “legacy” asbestos products in residences, schools, commercial building and infrastructure -- a pervasive source of exposure and risk throughout the US -- on the basis of a groundless assertion that this use and exposure do not comprise “conditions of use” subject to TSCA.

- EPA excludes Libby Amphibole, whose presence in the environment because of historical mining activities and in attic insulation installed in tens of thousands of homes poses a serious threat to health, on a similarly unsound basis.
- EPA refuses to examine the risks of reintroducing discontinued asbestos products even though its authority under TSCA clearly extends to these products and a permanent ban would provide critical protection against the return of these products to U.S. commerce.
- EPA likewise refuses to consider the risks of asbestos from releases to air and soil. These are important pathways for human exposure: asbestos fibers are released into ambient air during the maintenance, renovation and demolition of asbestos-containing buildings and large and ever-increasing amounts of asbestos debris enter waste streams.
- The only asbestos health effects EPA will consider are lung cancer and mesothelioma. Yet asbestos has been linked to ovarian cancer, cancer of the larynx, gastro-intestinal cancers and kidney cancer. Non-malignant diseases are also caused by asbestos, including asbestosis and asbestos-related pleural thickening. Excluding these serious, known health effects will mean that EPA significantly understates the extent of asbestos' threat to public health.
- By re-reviewing the major studies on asbestos using its controversial "systematic review" guidance, EPA has opened the door to reconsidering the quantitative risk values in its 1988 IRIS assessment for asbestos. This is an unwise and unjustified approach that fails to consider the overwhelming scientific consensus on asbestos risks to public health.
- The problem formulation evaluation excludes the risks presented by releases of asbestos during fires, terrorist actions such as the 9/11 World Trade Center attack and natural disasters. EPA's refusal to consider the threats to firefighters from asbestos releases from burning buildings is particularly troubling in view of recent studies demonstrating the seriousness of this risk.
- EPA will not examine the "background" levels of asbestos to which the general population is exposed -- a crucial element in understanding the contribution to risk of individual exposure pathways.

EPA should reconsider the scope of its narrow evaluation in light of these fundamental gaps and omissions or the evaluation will be a meaningless and largely irrelevant exercise that makes a mockery of TSCA reform.

EPA has touted its proposed Significant New Use Rule (SNUR) for certain uses of asbestos (and asbestos-containing products) as a meaningful action to reduce asbestos risks. The SNUR would require manufacturers and importers to notify the EPA of the intended new use and wait 90 days for EPA to complete its review before starting or resuming manufacturing, importing or processing of asbestos. The EPA would then need to evaluate the risk of the intended use of asbestos and determine whether the new use poses an unreasonable risk, warranting action to prohibit or limit the use.

This proposed SNUR is in fact the opposite of a ban on asbestos. A SNUR simply requires notice to EPA before new uses are introduced. The SNUR itself does not make any determination that the new use presents an unreasonable risk. Upon receiving a notice, EPA may ban or restrict the use but is not required to do so. Thus, the SNUR leaves the door open to explicitly allowing discontinued uses to re-enter the marketplace, despite the overwhelming evidence that they are unsafe and dangerous to public health. The proposed SNUR cannot compensate for the deficiencies in EPA's asbestos risk evaluation and is no substitute for a comprehensive assessment of all hazards and exposures followed by a permanent ban on all asbestos mining, importation and use.

Below, ADAO provides a fuller explanation of its concerns about the problem formulation.

ADAO Concerns with EPA Problem Formulation Document

1. Exclusion of current and future exposures to legacy asbestos products

EPA explains its refusal to evaluate the risks of exposure to discontinued asbestos products that are pervasive in the built environment and continue to be used and disposed of as follows:

“EPA interprets the mandates under section 6(a)-(b) to conduct risk evaluations and any corresponding risk management to focus on current and prospective uses for which manufacture, processing, or distribution in commerce is intended, known or reasonably foreseen, **rather than reaching back to evaluate the risks associated with legacy uses, associated disposal, and legacy disposal, and interprets the definition of “conditions of use” in that context** (TSCA section 6(b)(4)(B))” (Section 2.2.2.1) (emphasis added). .

This represents a misreading of the plain language of the Act and unjustifiably narrows EPA’s authority to address the most important pathways of exposure to asbestos today. The definition of “conditions of use” in section 3(4) covers the “circumstances...under which a chemical substance is...known or reasonably foreseen to be...used or disposed of.” Where a chemical is performing an ongoing in situ function as a result of previous manufacturing and processing activity, that function comprises a current “use” of the chemical that is “known” to be occurring [9]. Similarly, ongoing releases of asbestos fibers and asbestos-containing wastes constitute “known” forms of “disposal” and are “conditions of use” under TSCA as well.

Previous submissions by ADAO and leading asbestos experts demonstrate that installed asbestos-containing building materials (ACBMs) represent one of the largest sources of asbestos accessible to the general public in the U.S. and that the largest asbestos-exposed population consists of the millions of people who occupy, work in or visit commercial buildings, schools and homes with ACBMs. Maintenance and construction activities involving ACBMs are also frequent and widespread and account for the largest present-day increase in mesothelioma illness and death in the US. [9]

According to the Laborers’ Health and Safety Fund of North America’s (LHSFNA) docket submission on June 18th, 2018, “Repair or replacement of A/C pipe can present a significant risk of asbestos exposure for workers. The pipe is often being replaced because it is in poor condition and thus, the asbestos could become friable and airborne. A/C pipe generally contains about 12-15% asbestos. There are an estimated 400,000 miles of A/C pipe in the U.S.”

Two articles recently published discuss the threat of legacy asbestos in a school and a prison hospital. In both cases, multiple persons were exposed to asbestos for many years before being informed of asbestos’ presence or of its carcinogenic properties. “Hidden Peril”, published in the Inquirer, by Wendy Ruderman, Barbara Laker, and Dylan Purcell, exposed how asbestos and other toxins were lurking health threats at Lewis C. Cassidy Elementary School in Philadelphia. Danny Robbins’ article in the Atlanta Journal Constitution, “Cleanup at Ga. prison hospital leads to yet another problem – Asbestos,” revealed how a former employee of the prison hospital had notified his superiors and the government officials concerning asbestos in his workplace environment [10, 11]. These are just two examples of what must be millions of dangerous exposures that are occurring due to the prevalence of asbestos in our homes, schools, and other buildings, without the public’s awareness of this deadly threat.

2. Exclusion of Libby Amphiboles

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Another legacy use not included in the scope of the EPA evaluation is Libby Amphibole asbestos, which is a mixture of several mineral fibers such as winchite, richterite, and tremolite found in vermiculite ore mined near Libby, MT and extensively distributed throughout the United States during the 20th century:

“Vermiculite from Libby, MT had a range of commercial applications, the most common of which included packing material, attic and wall insulation, various garden and agricultural products, and various cement and building products. Although vermiculite contaminated with the Libby Amphibole remains in buildings as an insulating material, **it is no longer manufactured, processed or distributed for use in the United States and therefore is not considered a condition of use of asbestos for the purpose of risk evaluation under TSCA**” (Section 2.2.2.1) (emphasis added).

Again, EPA is distorting the requirements of TSCA to justify excluding an important ongoing source of risk. The continued presence of Libby Amphibole in attic and wall insulation across the US is evidence that it remains in “use.” Likewise, its presence in waste in Libby, MT and at other sites demonstrates that “disposal” is ongoing as well.

According to an article published in 2017, Dr. Brad Black, CEO and Medical Director for the Center for Asbestos Related Disease (CARD) clinic in Libby stated, “I think the mortality rates are really high here, with just the non-malignant effects from the material...The [burden of] progressive fibrotic disease has been very significant. It has not just involved the former vermiculite workers, who obviously had very high exposures, but also those who were exposed environmentally. We’ve lost a number of people to lung disease, including people who just lived and worked in Libby, but not at the mine” [12].

Since its opening in 2000, The CARD clinic has screened approximately 7500 people, and of those, Dr. Black estimates that 3400-3500 have some level of asbestos-related disease [12]. According to Dr. Black, 700 – 800 people are screened every year. In Libby and the surrounding Lincoln county, the rate of lung disease is 50-60% higher than the national average [12]. This rate is likely an underestimation because death certificates do not always appropriately link the cause of death to asbestos [12]. Furthermore, Dr. Black has found that low-level exposure, even lower than the allowed exposure rate in the workplace, causes pleural plaquing [12].

(Note: Please refer to the following document: [EPA’s Failure to Declare A Public Health Emergency in Libby, Montana](#). This document was prepared for Chairman Barbara Boxer and Senator Max Baucus in September 2008) [13].

3. Future reintroduction of discontinued asbestos products

The problem formulation also concludes that the reintroduction of phased out legacy products would not fall within the TSCA definition of “conditions of use” and cannot be addressed in the risk evaluation. However, as defined in TSCA section 3(4), “conditions of use” include not simply intended or known uses but the “circumstances under which a chemical substance is . . . reasonably foreseen to be manufactured, processed, distributed in commerce, used or disposed of.” In the case of asbestos, it is “reasonably foreseen” that long-standing and significant uses that have been phased out may re-enter commerce if there is no legal bar against undertaking these activities.

The extensive risk and exposure assessment for the 1989 asbestos ban rule demonstrates that these discontinued asbestos uses present an unreasonable risk under TSCA. EPA can easily reaffirm these findings in its ongoing risk evaluation. This

would then enable EPA to include the discontinued asbestos products in a ban under section 6(a), permanently removing them from commerce.

4. Exclusion of serious and documented asbestos-related diseases from the risk evaluation

The problem formulation indicates that the risk evaluation will only address some of the asbestos-related health effects:

“EPA had previously, in the IRIS assessments, identified asbestos as a carcinogen causing both lung cancer and mesothelioma from inhalation exposures and derived a unit risk to address both cancers. No toxicity values or unit risks have yet been estimated for other cancers that have been identified by the International Agency for Research on Cancer and others...EPA has decided **to limit the scope of its systematic review to these two specific cancers...**” (Section 2.4.2).

This limitation will result in a fundamentally incomplete risk evaluation.

Submissions to the docket document the linkage between asbestos and ovarian cancer, cancer of the larynx, gastrointestinal cancers and kidney cancers [9]. Non-malignant diseases are also caused by asbestos, including asbestosis and asbestos-related pleural thickening.

Global consensus by the world’s top public health organizations and agencies, including the World Health Organization (WHO), International Labor Organization (ILO), National Institute of Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), Centers for Disease Control (CDC) and the U.S. Surgeon General, holds that there is “no safe level” of asbestos exposure. Specifically, according to the WHO, “[a]ll types of asbestos cause lung cancer, mesothelioma, cancer of the larynx and ovary, and asbestosis (fibrosis of the lungs)” [14].

At the 14th Annual International Asbestos Awareness and Prevention Conference in Washington D.C., Dr. Jukka Takala DSc, MSc, BSc, President of the International Commission of Occupational Health (ICOH), reported a shocking increase in asbestos-related deaths, underscoring the escalating and critical need for an asbestos ban. According to Dr. Takala’s research, asbestos-related diseases cause 39,275 deaths in the United States annually - more than double the previous estimates of 15,000 per year. Specifically, asbestos leads to 34,270 lung cancer deaths, 3,161 mesothelioma deaths, 787 ovarian cancer deaths, 443 larynx cancer deaths, and 613 chronic asbestosis deaths [1].

In short, the occurrence of multiple cancer and non-cancer health effects from exposure to asbestos is real and significant and cannot be ignored.

5. Reexamining the Unit Risk in the 1988 IRIS assessment

The problem formulation indicates that EPA will review the asbestos database “with the goal of updating, or reaffirming, the unit risk.” It describes this review as follows:

“Asbestos has an existing EPA IRIS Assessment and an ATSDR Toxicological Profile; hence, many of the hazards of asbestos have been previously compiled and reviewed. EPA relied heavily on these comprehensive reviews in preparing the scope and problem formulation documents. EPA expects to use these documents as a starting point for identifying key and supporting studies to inform the human health hazard assessment, including dose-response

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analysis. EPA also expects to consider other studies that have been published since these reviews, as identified in the literature search conducted by the Agency for asbestos (Asbestos (CASRN 1332-21-4) Bibliography: Supplemental File for the TSCA Scope Document, EPA-HQ-OPPT-2016-0736). The relevant studies will be evaluated using the data quality criteria in the Application of Systemic Review in TSCA Risk Evaluations document (U.S. EPA, 2018).” (Section 2.4.2)

EPA should not be re-examining the conclusions reached in the 1988 IRIS assessment and other authoritative assessments of asbestos risk. These conclusions were reached after extensive public comment and peer review, including a careful consideration of individual studies. It is particularly problematic to reassess the epidemiological studies on asbestos using the numerical scoring system for study “quality” in EPA’s systematic review guidance. This scoring system has not been peer reviewed and embodies an approach that the scientific community, including the National Academy of Sciences (NAS), has rejected.

6. Exclusion of disposal and other pathways of environmental exposure

The problem formulation states that “EPA does not expect to include in the risk evaluation pathways under programs of other environmental statutes, administered by EPA, which adequately assess and effectively manage exposures and for which long-standing regulatory and analytical processes already exist.” (Section 2.5.3.3) Based on this rationale, the risk evaluation will not consider air emissions of asbestos and disposal of asbestos-containing waste.

The extreme approach of removing all environmental exposure pathways from the asbestos risk evaluation is a clear violation of TSCA’s plain language and frustrates its basic purpose -- to conduct comprehensive risk evaluations on ubiquitous chemicals that examine the impacts on health and the environment of all of the diverse pathways and modes of release that may result in harm. As the case of asbestos clearly illustrates, it is simply incorrect that environmental exposure pathways are effectively controlled under other laws and do not present a significant risk to human health.

The release of fibers to the air from friable asbestos materials during maintenance, renovation and demolition activities for existing structures and repair of infrastructure is a well-documented occurrence that, contrary to EPA, is not adequately regulated under the Hazardous Air Pollutant (HAP) provisions of the Clean Air Act.

Similarly, the disposal of asbestos-containing wastes is a growing source of exposure by workers and the general population. As noted in the problem formulation: “From 2009 to 2015, total on-site and off-site disposal or other releases of friable asbestos have risen 8.8 million pounds to nearly 25.6 million pounds, respectively” (Section 2.3.2).

In 2015, the Toxic Release Inventory (TRI) stated that 25.6 million pounds of asbestos waste came from 36 facilities [15]. Of this amount, 0 pounds were recovered for energy, 875 pounds were recycled, 188,437 pounds were treated, and 25.4 million pounds were discharged into the environment. Of the 25.4 million pounds released to the environment, the majority ended up in landfills and other disposal facilities; however, 314 pounds were released into the air [15]. In 2009, the total of on- and off-site disposal and other releases of friable asbestos was 8.75 million; in 2015, the total of on- and off-site disposal and other releases was 25.6 million pounds, an almost 300% increase [15]. These data likely account for a small percentage of asbestos-containing wastes because TRI reporting is limited in scope and would not capture debris from repair, renovation or demolition of buildings, a pervasive source of asbestos disposal.

EPA apparently believes that asbestos-containing waste is effectively and safely regulated under other environmental laws but acknowledges that asbestos is not treated as a “hazardous waste” under the Resource Conservation and Recovery Act (RCRA), a loophole that underscores the need to better understand the nature and extent of the risk posed by asbestos-containing wastes.

7. Exclusion of exposures from fires, terrorist attacks and other one-time events

In Table 2-4 (Section 2.3.2.) Summary of Asbestos TRI Production-Related Waste Managed in 2015, Footnote B states **“Does not include releases due to one-time events not associated with production such as remedial actions or earthquakes”** (Section 2.3.2) (emphasis added).

Disasters include terrorist attacks, wildfires, floods, hurricanes, tornadoes, tsunamis, etc. They pose many dangers the moment they occur, and in the aftermath. While immediate priorities are availability of shelter, food, electricity, water and medical care, there is a threat of exposure to many carcinogens in the air and water. Before the 1980s, a substantial amount of homes and commercial buildings were constructed using asbestos-containing materials. According to the EPA, these legacy remnants of asbestos are not dangerous if in good condition. However, once these materials are ripped, broken, burned, blown or washed away, they can become friable and release asbestos fibers. Emergency response crews and volunteers (as well as building occupants) are at high risk of asbestos exposure in the wake of the disasters. Where the duration of exposure is prolonged and more episodes of exposure occur, the risk of developing asbestos-related diseases is increased [16].

A well-studied disaster in the U.S. was the 2001 attack on the World Trade Center (WTC) [17]. This is the largest environmental disaster in history to impact the City of New York [17]. When the towers collapsed, “thousands of tons of particulate matter consisting of cement dust, glass fibers, lead, asbestos, polycyclic aromatic hydrocarbons (PAHs)” and other pollutants were expelled into the environment [17]. The pollutants spread over Manhattan, Brooklyn and miles beyond. Although the airborne levels of asbestos fell to within EPA regulations within a few days, the settled dust at and around Ground Zero had concentrations ranging between 0.8 and 3.0% [17].

First responders, such as firefighters, are at greatest future risk of developing asbestos-related diseases [17]. Using 9/11 as an example of environmental and occupational risk, it would be important to look similar events of lesser magnitude. On July 19, 2018, reports of a 20-inch steam pipe exploding in a heavily populated area in Manhattan, New York confirmed that there was asbestos in the pipes. The pipe that exploded under a street presented an unreasonable environmental and occupational risk. It is necessary to consider the dangers of such accidental exposures to legacy asbestos in order to keep U.S. citizens safe [18].

Waste management is crucial after any disaster, due to the large amounts of debris waste that typically contains materials toxic to human health, including asbestos. “Poor waste management not only causes environmental pollution in water, soil and air, but also causes harm to human health, particularly that of workers. 5000 tons of ACBMs were released during the collapse of the World Trade Center in 2001, and the amount of asbestos fibers discharged was 555 times greater than the permissible level” [19].

Kim et. al developed an estimation model aimed at quantifying asbestos exposure due to disasters such as earthquakes [19]. According to the U.S. Asbestos Hazard Emergency Response Act (AHERA), the condition of asbestos-containing materials is separated into three categories: good, damaged and significantly damaged. AHERA was implemented under

TSCA creating protocols for schools to remove damaged asbestos from the infrastructure. The model quantifies asbestos fibers released based on the area of the building and the materials severity of damage [19]. Their study reinforced the correlation between damage and asbestos fibers; the greater the damage, the more asbestos fiber would scatter [19]. According to Culley et al, whenever possible, a proactive and preventive approach to Natural Occurring Asbestos (NOA) should be utilized to avoid exposures [20]. NOA refers to asbestos that is not commercially mined or used but released from rocks or soils when disturbed by humans [20]. Along with natural disasters disturbing asbestos-containing manmade materials, NOA elevates exposure risk and must be taken into consideration [20].

8. Minimizing the risks for firefighters

The problem formulation reverses the scoping document and excludes risks to firefighters from the risk evaluation:

“In the Scope document, firefighters were also included as a potentially exposed or susceptible subpopulation. **HOWEVER, firefighters will be exposed to materials that are predominantly legacy uses, which will not be evaluated in the risk evaluation.**” (Section 2.3.5.4) (emphasis added).

Firefighters are a vulnerable population and are at greater risk for exposure to carcinogenic asbestos than the general population. A study by NIOSH researchers found that “the population of firefighters in the study had a rate of mesothelioma two times greater than the rate in the U.S. population as a whole” [21]. This study examined cancer incidence and mortality among firefighters in San Francisco, Chicago, and Philadelphia. EPA should expand the risk evaluation to include firefighters from other major U.S. cities, including New York, Boston, Detroit, Miami and Los Angeles [21]. This serves as yet another example of how legacy asbestos in structures poses a substantial ongoing risk.

At the scientific hearing on the World Trade Organization asbestos case in 2000, Australian pathologist Douglas Henderson testified that the legacy of asbestos materials in buildings posed a risk to firefighters [22, 23].

9. Inability to account for how much asbestos is imported within products

According to the problem formulation:

“Most asbestos-containing products listed are primarily associated with industrial and commercial use. **It is important to note that the import volume of products containing asbestos is not known**” (Section 2.2.2.2) (emphasis added).

EPA’s failure to quantify the continued and ongoing impact of new asbestos exposures caused by current imports of raw asbestos and asbestos-containing products is a serious deficiency of the risk evaluation. In 2016, U.S. chemical corporations reported the importation of **702 tons** of raw asbestos which they purport to use in the chlor-alkali manufacturing processes [24]. The initial estimate for 2016 was 340 tons. Therefore, the actual amount of importation was more than double what was initially estimated by the United States Geological Survey (USGS) [24]. This spike in raw asbestos imports suggests that the companies may be stockpiling asbestos in anticipation of further restrictions on mining in Brazil. Brazil passed a law to ban asbestos completely at the end of 2017; before this ban, the U.S. asbestos imports came entirely from Brazil, as reported by USGS in 2015 [24]. According to Fernanda Giannasi’s 2007 paper “Ban on Asbestos Diaphragms in the Chlorine-related Chemical Industry and Efforts toward a Worldwide Ban” in the International Journal of Occupational

and Environmental Health, the dangers of asbestos imports and exposure have been widely documented for many years [25].

In March 2018, United States Public Interest Research Group (U.S. PIRG), a group well-known as an advocate for the public interest, released a report that new studies show asbestos contamination in Claire's makeup products sold nationally [26]. U.S. PIRG decided to investigate independently after media reports in 2017 claimed that some of children's make-up contain asbestos [26]. Using STAT Analysis Corporation, an independent laboratory that is accredited for asbestos testing, PIRG tested over a dozen makeup products from a variety of stores [26]. The found three products containing asbestos (tremolite), and these products are sold by Claire's [26].

10. The discovery of asbestos in Claire's makeup products raises serious concern, and shows the possibility that thousands of asbestos-containing products may be imported in the U.S. every year with unknown amounts of asbestos. Astonishingly, however, EPA states that they not only have no idea how many asbestos-containing products are imported, but they also do not offer a solution or plan to determine this amount [15]. Our estimates of asbestos exposure in the U.S. are limited by lack of information from the Chlor-alkali industries, and other businesses that are importing asbestos-containing products. Often, this information remains confidential due to businesses claiming Confidential Business Information (CBI) [15]. Reviewing All Data-bases on Asbestos Exposure.

EPA must use the risk evaluation process to review all information about violations, recommendations, exposure data, and morbidity/mortality rates for vulnerable populations reported by the following agencies:

- Occupational Safety and Health Administration (OSHA) and the state agencies that operate their own OSHA programs
- National Institute of Occupational Safety and Health (NIOSH)
- Consumer Product Safety Commission (CPSC)
- Agency for Toxic Substances and Disease Registry
- Global Burden of Disease Compare Database from University of Washington

Without examining this information, the evaluation will present an incomplete picture of asbestos risks.

Consideration of Past Submissions and Meetings

ADAO made submissions to the EPA docket in March 2017 and January 2018, providing important information that should have been considered in EPA's scoping document and problem formulation. Please refer to the following past submissions (attached with this docket submission):

1. March 15, 2017: ADAO submitted a letter to the docket regarding EPA's TSCA Scoping document for the first 10 chemicals: <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0736-0044>
 - a. This submission references the following documents
 - i. ACC letter regarding Risk Evaluation Procedural Rule under Toxic Substances Control Act Section 6(b)(4)
 - ii. CDC/NIOSH document regarding Mortality and Cancer Incidence in a Pooled Cohort of US Firefighters from San Francisco, Chicago and Philadelphia (1950-2009)

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- iii. CDC document regarding Malignant Mesothelioma Mortality United States, 1999-2015
2. September 19, 2017: ADAO submitted a letter regarding Asbestos; TSCA Review and Scoping: <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0736-0098>.
 - a. This submission references the following documents
 - i. ADAO's "Ban Asbestos in the US Now, Without Any Loopholes or Exemptions" Petition with over 12,000 signatures
 - ii. ADAO Low-Dose Studies Submission
3. January 15, 2018: ADAO submitted a letter to the docket regarding the December 6, 2017 New Chemicals Review Program Implementation Meeting: <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0736-0136>.
4. April 11, 2018: ADAO submitted a letter to the docket regarding a Meeting with EPA Staff and Jeff Morris regarding EPA's approach to the asbestos risk evaluation: <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0736-0127>.
5. May 10, 2018: ADAO submitted Global Estimates and Asbestos at Work – Problems and Solutions, a study by Jukka Takala, to the docket: <https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0736-0126>.
6. March 29, 2018: In addition to our submissions, ADAO also submitted the following three reports:
 - a. "Continuing Public Asbestos Exposure in the US" by Dr. Barry Castleman
 - b. "Unsafe Exposure to Asbestos from Installed Asbestos-Containing Building Materials" by Brent Kynoch
 - c. "The Threat to Health Posed by Asbestos in the 21st Century in the United States" by Christine Oliver
7. August 9, 2018: ADAO submitted a letter to the docket regarding the Significant New Use Rule (SNUR) for asbestos.
8. Furthermore, we are forwarding you:
 - a. The United States Senate Committee on Environment and Public Works Majority Staff and the United States Senate Office of Senator Max Baucus Environmental Staff's Post Hearing Report "EPA's Failure to Declare a Public Health Emergency in Libby, Montana" Report from September 2008.
 - b. The Ban Asbestos in the US Now, Without Loopholes or Exemptions Petition with over 20,000 signatures.

Along with these docket submissions, ADAO organized two meetings with the EPA in Washington, D.C.

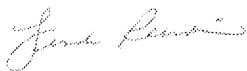
1. The first meeting on March 30, 2017 was held to reiterate our position about EPA's scoping document on asbestos:
 - a. Facts restated
 - i. There is no safe level of exposure to any form of asbestos;
 - ii. The at-risk populations include both occupational and non-occupational exposure;
 - iii. There should be no exemptions for specific industries;
 - iv. Reject calls to repeal, replace or modify any existing asbestos-related regulations based on Executive Order 13777;
 - v. Rely on public health science, not industry funded studies.
 - b. Meeting attendees
 - i. Liz Hitchcock – Legislative Director, Safer Chemicals, Healthy Families
 - ii. Brent Kynoch – Managing Director, Environmental Information Association (EIA)
 - iii. Richard Lemen – PhD, MSPH, Asst. U.S. Surgeon General (ret.)

- iv. Celeste Monforton – DrPH, MPH, American Public Health Association (APHA) OSH Section
 - v. L. Christine Oliver – MD, MPH, MS, FACPM, Harvard Medical School
 - vi. Linda Reinstein – Founder/CEO, Asbestos Disease Awareness Organization
2. The second meeting on March 29, 2018 was held to discuss:
- a. Topics discussed
 - i. The proposed EPA exclusions of legacy and Libby Amphiboles
 - ii. The impact on public health in the environment
 - iii. The increased imports
 - iv. The need to ban asbestos
 - b. Meeting attendees
 - i. Liz Hitchcock – Legislative Director, Safer Chemicals, Health Families
 - ii. Robert Sussman – Safer Chemicals, Healthy Families
 - iii. Peg Seminario – Safety and Health Director, AFL-CIO
 - iv. Brent Kynoch – Managing Director, Environmental Information Association (EIA)
 - v. Arthur L. Frank – MD, PhD
 - vi. Barry Castleman – ScD
 - vii. Celeste Monforton – DrPH, MPH, American Public Health Association (APHA) OSH Section
 - viii. Patrick J. Morrison – International Association of Fire Fighters
 - ix. Linda Reinstein –Cofounder/CEO, Asbestos Disease Awareness Organization

Conclusion and Call to Action

ADAO has sent via priority mail (tracking number: 9407803699300041407798) over 20,000 signatures urging the EPA to ban asbestos without exemptions or loopholes.

ADAO urges EPA carefully consider the deadly flaws in the risk evaluation outlined in these comments and to address these flaws so that its risk evaluation provides a full assessment of the widespread and serious threat asbestos poses to human health in the U.S.



Linda Reinstein, Asbestos Disease Awareness Organization, President and Cofounder

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